

Idaho Diabetes Prevention and Control Program

2002 Idaho Behavioral
Risk Factor Surveillance
System

1997 - 2001 Trend Report



Division of Health
Idaho Department of Health and Welfare
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Introduction

Diabetes in Idaho is steadily increasing. Since 1997, diabetes has gone from 4.0% to 5.4% in 2001. This figure represents a 35% increase in the prevalence of diabetes, a figure that matches a national increase in the prevalence of diabetes. The cost of treating diabetes is also increasing. The estimated annual economic cost of diabetes in Idaho is \$468 million as of 2001 (direct and indirect costs).

The *1997-2001 Trend Report* provides a snapshot of the impact diabetes has had in Idaho from 1997-2001 and provides a measure of how diabetes is managed. As a benchmark measure, Healthy People 2010 diabetes objective measures, where applicable, are included in this report. Trend data are also available in some categories for the seven Idaho district health departments.

Data are from the Idaho Behavioral Risk Factor Surveillance System (BRFSS), a statewide, random telephone survey conducted annually with an average of 4,900 adults over the age of 18. Throughout this report, charts are provided with 95 percent confidence intervals. Confidence intervals are simply a range of numbers that indicate a 95 percent assurance that the numerical estimates fall between the high and low ranges listed.

These data are used by the Idaho Diabetes Prevention and Control Program (DPCP) and partners to plan programs, work with health systems, support community interventions, and develop health communication messages.

The Idaho DPCP is funded by The Centers for Disease Control and Prevention (CDC) through a cooperative agreement with the Idaho Department of Health and Welfare. In partnership with CDC, the Idaho DPCP addresses seven National Diabetes Objectives that are supported by clinical and translation research outcomes. These objectives include:

1. Conduct surveillance
2. Increase utilization of A1c testing
3. Increase the rate of foot exams
4. Increase the rate of eye exams
5. Increase the rate of flu and pneumonia vaccinations
6. Reach disparate populations
7. Develop wellness linkages for physical activity, nutrition, healthy weight and smoking cessation

To address these objectives, the DPCP works to develop strategies that monitor health, mobilize partnerships, link people to care, facilitate public and professional awareness about diabetes, and evaluate programs and outcomes.

The goals of the DPCP are to prevent diabetes and to help people who have diabetes live a healthier life.

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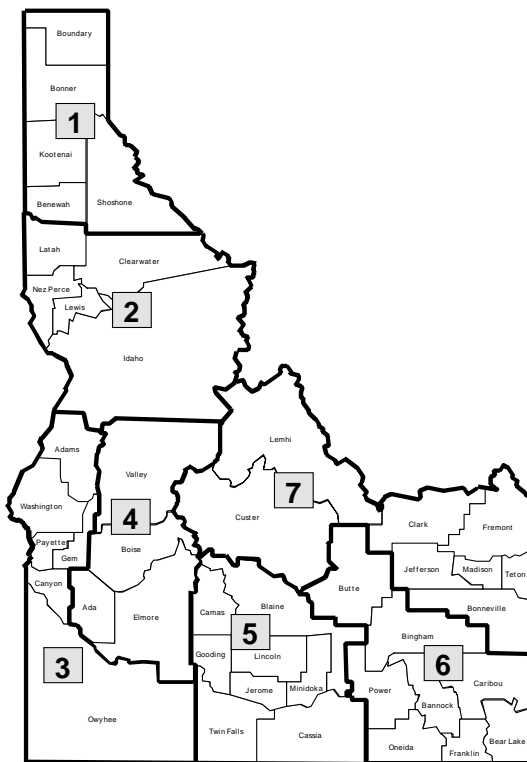
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Idaho Diabetes Management Trends - Age and Gender

There is evidence that diabetes is increasing among younger age groups at a faster rate than the traditional older age groups. Additionally, prevalence among women increased over the following three age groups: 18-34, 35-54 and 55 and older. These data are consistent with the findings that the prevalence increase in Idaho has been primarily driven by women. The BRFSS data is used to examine four separate areas: age groups geographically by health departments, age groups statewide as a whole, gender and by both age and gender combined.

District Health Departments

There are seven district health departments in Idaho. Within each district there are several counties served. It is worthy to note that public health district 7 was the only district to show a significant upward linear trend among adults that had been told they had diabetes although it should be noted that lack of an upward trend in other districts may be a result of smaller sample sizes. All public health districts in Idaho saw an increase in the prevalence of diabetes between 1997 and 2001.



District 1

Year	District 1	95% Confidence Intervals	
		Lower	Upper
1997	3.9%	2.3%	5.4%
1998	4.9%	3.0%	6.7%
1999	6.3%	4.3%	8.3%
2000	5.5%	3.8%	7.2%
2001	5.4%	3.6%	7.2%

Note: Public Health District 1 includes Boundary, Bonner, Benewah, Kootenai, and Shoshone counties.

District 2

Year	District 2	95% Confidence Intervals	
		Lower	Upper
1997	2.8%	1.5%	4.2%
1998	4.2%	2.7%	5.8%
1999	4.8%	3.2%	6.4%
2000	4.2%	3.8%	7.6%
2001	4.2%	2.6%	5.7%

Note: Public Health District 2 includes Latah, Nez Perce, Clearwater, Lewis, and Idaho counties.

District 3

Year	District 3	95% Confidence Intervals	
		Lower	Upper
1997	5.1%	3.4%	6.8%
1998	4.6%	2.8%	6.3%
1999	5.7%	3.8%	7.6%
2000	6.0%	4.2%	7.9%
2001	6.1%	4.1%	8.1%

Note: Public Health District 3 includes Adams, Washington, Payette, Gem, Canyon, and Owyhee counties.

District 4

Year	District 4	95% Confidence Intervals	
		Lower	Upper
1997	3.4%	1.9%	4.9%
1998	3.8%	2.2%	5.3%
1999	4.0%	2.4%	5.6%
2000	3.7%	2.0%	5.3%
2001	5.3%	3.5%	7.0%

Note: Public Health District 4 includes Valley, Boise, Ada, and Elmore counties.

District 5

Year	District 5	95% Confidence Intervals	
		Lower	Upper
1997	4.8%	3.1%	6.5%
1998	5.3%	2.9%	7.6%
1999	4.4%	2.9%	6.0%
2000	5.0%	3.2%	6.7%
2001	5.0%	3.2%	6.7%

Note: Public Health District 5 includes Camas, Blaine, Gooding, Lincoln, Jerome, Minidoka, Twin Falls, and Cassia counties.

District 6

Year	District 6	95% Confidence Intervals	
		Lower	Upper
1997	4.4%	2.7%	6.1%
1998	5.0%	3.2%	6.9%
1999	4.9%	2.8%	7.1%
2000	5.9%	4.0%	7.7%
2001	6.4%	4.4%	8.3%

Note: Public Health District 6 includes Butte, Bingham, Power, Bannock, Oneida, Caribou, Franklin, and Bear Lake counties.

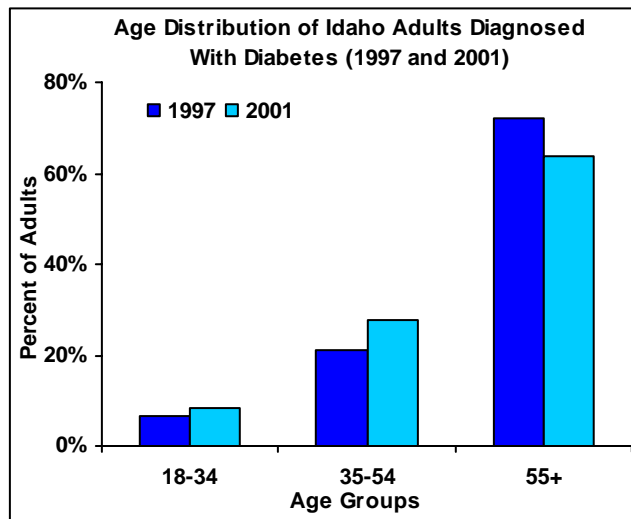
District 7

Year	District 7	95% Confidence Intervals	
		Lower	Upper
1997	4.0%	2.5%	5.6%
1998	2.8%	1.7%	4.0%
1999	3.9%	2.4%	5.3%
2000	4.8%	3.1%	6.5%
2001	5.7%	3.9%	7.4%

Note: Public Health District 7 includes Lemhi, Custer, Clark, Fremont, Jefferson, Madison, Teton, and Bonneville counties.

Diabetes and Age

Type 1 diabetes usually occurs in children and adults under age 30. It develops when the body's immune system attacks the insulin-producing cells of the pancreas. However, about 90 percent of diabetes in the U.S. is type 2 diabetes. It is most common in adults over age 40. Type 2 diabetes occurs when the cells do not use insulin properly and the pancreas is not producing enough insulin.¹

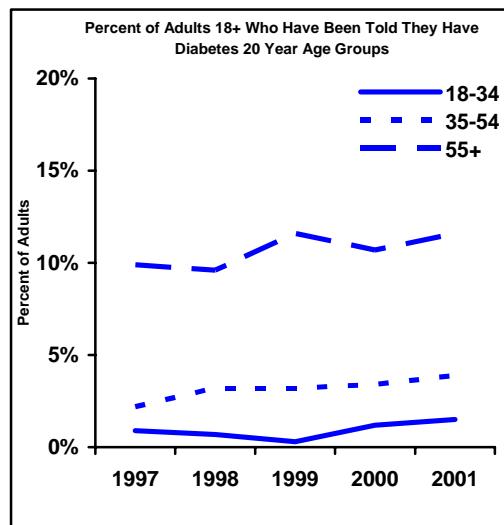


In 1997, adults 65 and older represented 52 percent of all diagnosed diabetes cases in Idaho, but in 2001 only 41 percent of adults with diagnosed diabetes were 65 or older.

Year	18-34	95% Confidence Intervals	
		Lower	Upper
1997	0.9%	0.3%	1.4%
1998	0.7%	0.1%	1.2%
1999	0.3%	0.0%	0.5%
2000	1.2%	0.6%	1.8%
2001	1.5%	0.9%	2.1%

95% Confidence Intervals			
Year	35-54	Lower	Upper
1997	2.2%	1.5%	2.9%
1998	3.2%	2.3%	4.1%
1999	3.2%	2.3%	4.1%
2000	3.4%	2.6%	4.2%
2001	3.9%	2.8%	4.9%

95% Confidence Intervals			
Year	55+	Lower	Upper
1997	9.9%	8.1%	11.7%
1998	9.6%	7.7%	11.4%
1999	11.6%	9.6%	13.5%
2000	10.7%	8.8%	12.7%
2001	11.6%	9.7%	13.5%



When looking at the age groups 18-34, 35-54 and 55 and older, prevalence has increased in magnitude across all age groups, but has only significantly increased since 1997 among adults 18-34 years of age.

Diabetes and Gender

Type 2 diabetes is more prevalent among women than men, making prevention and early detection particularly important in the treatment of women. Major areas of health care concern for women with diabetes include cardiovascular disease, mental health, infections, and contraception and fertility. Knowledge of lifespan issues from adolescence through menopause is crucial to the management of women with diabetes.¹⁰

95% Confidence Intervals			
Year	Male	Lower	Upper
1997	4.5%	3.5%	5.6%
1998	4.7%	3.6%	5.8%
1999	4.8%	3.8%	5.9%
2000	4.6%	3.6%	5.7%
2001	5.2%	4.1%	6.2%

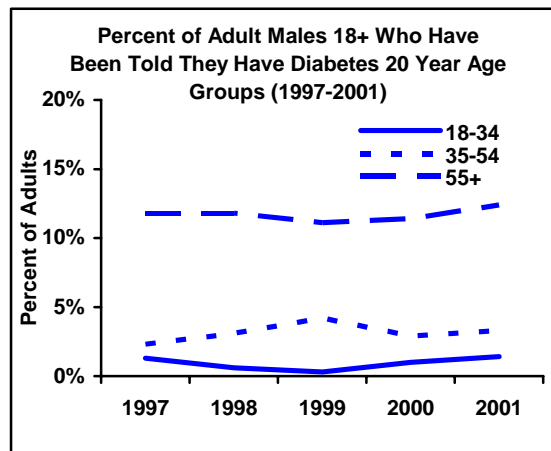
Diabetes by Gender and Age

Women with diabetes have special health care concerns that must be addressed by members of the clinical management team. Although the incidence of type 1 diabetes is similar for men and women, the prevalence of type 2 diabetes is higher among women, particularly after the age of 65.¹⁰

Year	Males	95% Confidence Intervals	
	18-34	Lower	Upper
1997	1.3%	0.3%	2.2%
1998	0.6%	0.0%	1.5%
1999	0.3%	0.0%	0.6%
2000	1.0%	0.1%	1.9%
2001	1.4%	0.4%	2.3%

Year	Males	95% Confidence Intervals	
	35-54	Lower	Upper
1997	2.3%	1.2%	3.4%
1998	3.1%	1.9%	4.3%
1999	4.2%	2.5%	5.9%
2000	2.9%	1.8%	4.0%
2001	3.3%	1.8%	4.7%

Year	Males	95% Confidence Intervals	
	55+	Lower	Upper
1997	11.8%	8.6%	15.0%
1998	11.8%	8.4%	15.1%
1999	11.1%	8.4%	13.8%
2000	11.4%	8.1%	14.6%
2001	12.4%	9.4%	15.4%

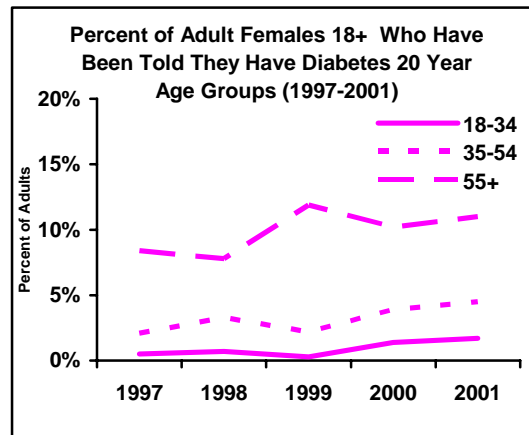


The change among men has been more modest with no significant upward trend detected across any of the twenty-year age groups.

Year	Females	95% Confidence Intervals	
	18-34	Lower	Upper
1997	0.5%	0.0%	0.9%
1998	0.7%	0.0%	1.4%
1999	0.3%	0.0%	0.6%
2000	1.4%	0.6%	2.3%
2001	1.7%	0.7%	2.6%

Year	Females	95% Confidence Intervals	
	35-54	Lower	Upper
1997	2.1%	1.2%	2.9%
1998	3.3%	2.1%	4.6%
1999	2.2%	1.3%	3.1%
2000	3.9%	2.6%	5.1%
2001	4.5%	3.0%	6.0%

Year	Females	95% Confidence Intervals	
	55+	Lower	Upper
1997	8.4%	6.4%	10.3%
1998	7.8%	5.8%	9.7%
1999	11.9%	9.3%	14.6%
2000	10.2%	7.9%	12.5%
2001	11.0%	8.5%	13.4%



Diabetes has significantly increased among women since 1997. Female prevalence has increased an average of 13 percent per year compared to a 4 percent increase among men.

Idaho Diabetes Management Trends - Foot Care

Amputation and foot ulcers are a common medical risk factor and a common cause of disability for people with diabetes. In many cases, foot complications are manageable and preventable with regular foot exams and daily self foot care. In Idaho, in 2001, 87 percent of adults with diabetes checked their own feet at least one time per week.⁵ In 2001, 11.8 percent of respondents with diabetes stated that at sometime in the last year they experienced sores on their feet that took four or more weeks to heal.⁵

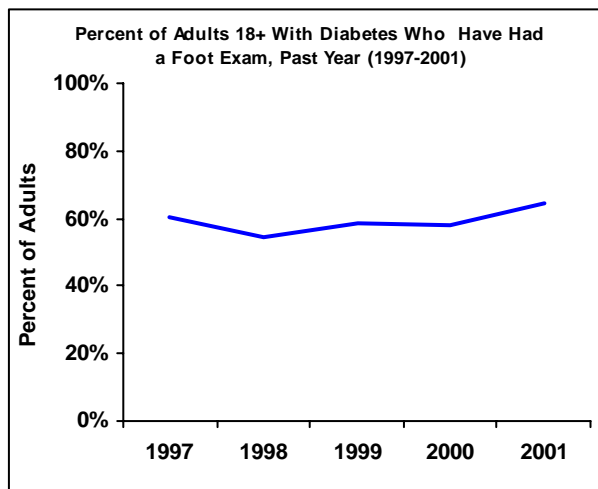
American Diabetes Association Clinical Practice Recommendations

An annual comprehensive foot examination is recommended for patients with diabetes to identify risk factors predictive of ulcers and amputations. A visual inspection of patients' feet at each routine visit should be performed.¹

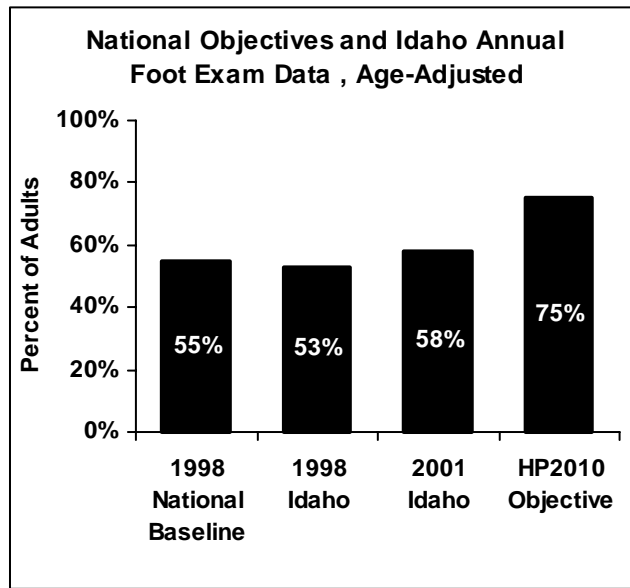
The HP2010 Objective

To ensure that 75% of adults with diabetes aged 18 or older receive at least one foot examination annually.³

Year	% Having an Annual Foot Exam	95% Confidence Intervals	
		Lower	Upper
1997	60.6%	52.9%	68.4%
1998	54.2%	45.7%	62.6%
1999	58.6%	51.1%	66.1%
2000	58.1%	50.9%	65.4%
2001	64.4%	57.8%	71.1%



There has been no statistically significant change in the rate at which adults in Idaho with diabetes have received at least an annual foot exam since 1997.



Using age-adjusted estimates, Idaho is similar to the national baseline estimate for the rate of foot exams. The 2001 age-adjusted foot exam estimate is 58 percent in Idaho.⁵

Idaho Diabetes Management Trends – Self-Monitoring Blood Glucose (SMBG)

Glycemic control is critical to the management of diabetes and preventing diabetes related health complications. For patients with Type 1 diabetes, the consensus is self-monitoring of blood glucose (SMBG) levels is optimal if performed 3-4 times daily.¹ No consensus has been reached on a recommended frequency of SMBG for Type 2 diabetes patients, but frequency should be sufficient to reach and maintain normal glucose levels.¹ SMBG is recommended for all patients using insulin, which comprise 28.5 percent of adults with diabetes in Idaho in 2001.

American Diabetes Association Clinical Practice Recommendations

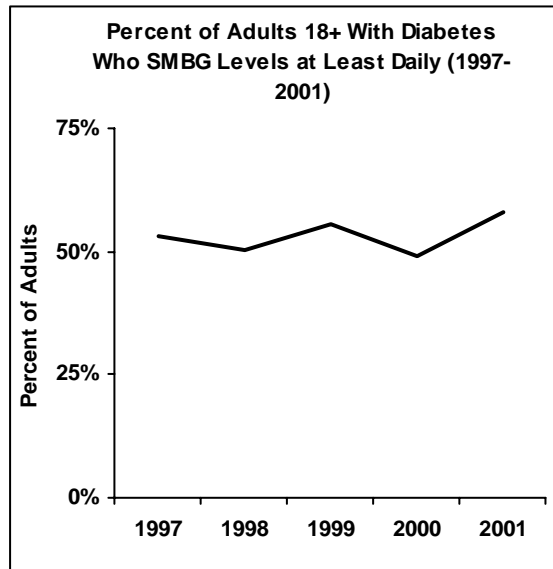
Most individuals with diabetes should achieve and maintain glycemic controls through daily self-monitoring of blood glucose levels.¹

The HP2010 Objective

To increase the proportion of adults who perform self-blood glucose monitoring at least once daily.³

Year	% Monitoring Blood Glucose at Least Daily	95% Confidence Intervals	
		Lower	Upper
1997	53.1%	45.1%	61.1%
1998	50.4%	42.2%	58.5%
1999	55.6%	48.3%	63.0%
2000	49.2%	41.8%	56.5%
2001	58.2%	51.2%	65.1%

There has been no statistical change in the rate at which adults residing in Idaho with diabetes have performed daily SMBG since 1997.



Comparing Idaho to national estimates based on age-adjusted 2001 BRFSS data, Idaho (63 percent) has already exceeded the Healthy People 2010 objective of 60 percent.³

Idaho Diabetes Management Trends – Dental Care

Although periodic oral examinations are not included as a standard of care, periodontal disease and diabetes are interrelated. There are links between periodontal disease and hyperglycemia that complicate diabetes control. Diabetes increases the risk of oral health conditions with symptoms such as chronic dry mouth and soft tissue lesions in the mouth and mucous areas. Treatment guidelines issued by the Centers for Disease Control and Prevention (CDC) recommend that people with diabetes see a dentist at least once every 6 months, and visits should be more frequent if periodontal disease is present.²

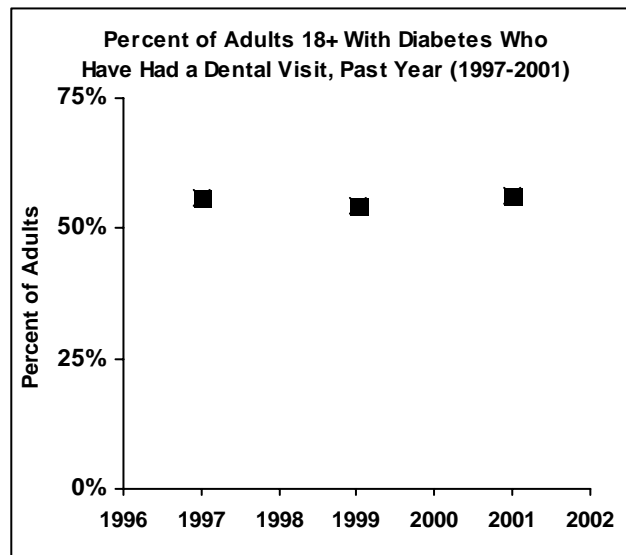
American Diabetes Association Clinical Practice Recommendations

Although periodic oral examinations are not included as a standard of care, periodontal disease and diabetes are interrelated.

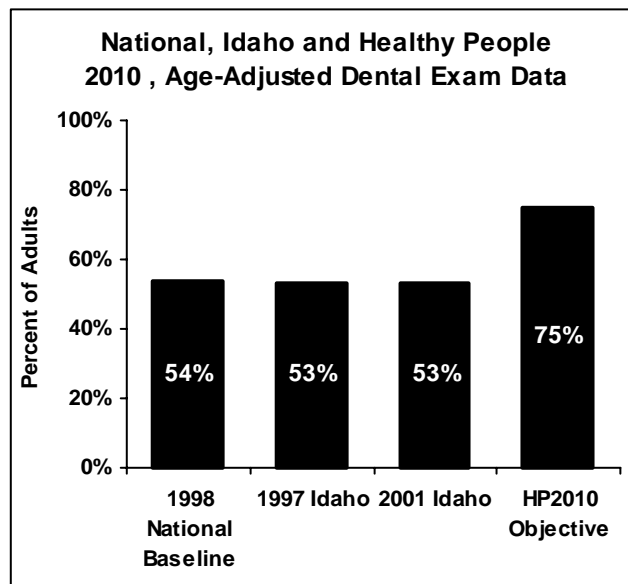
The HP2010 Objective

To increase the proportion of persons with diabetes who have at least an annual dental examination to 75%.³

Year	% Having at Least an Annual Dental Visit	95% Confidence Intervals	
		Lower	Upper
1997	55.7%	47.7%	63.6%
1998	NA	NA	NA
1999	54.2%	46.8%	61.7%
2000	NA	NA	NA
2001	56.3%	49.4%	63.3%



There has been no statistical change in the rate at which Idaho adults with diabetes have received at least an annual dental exam since 1997. Rate of dental visits in the past year have remained constant over the past 5 years among adults residing in Idaho with diabetes.



Sixty-five percent of people without diabetes visit the dentist annually. Using 2001 data, adults with diabetes were less likely to have visited a dentist in the past year using an age-adjusted comparison. Sixty-six percent of adults without diabetes had visited a dentist in the previous year compared to 56.3 percent of adults with diabetes. Even though people with diabetes were likely to visit a dentist, they were equally likely to have had dental insurance between the ages of 18-64 and Medicare if aged 65 and older. The low percentage of adults 65 and over reflects both the lack of dental coverage through Medicare as well as the lower employment rate of this age group. Comparing Idaho to national estimates based on age-adjusted dental exam data, Idaho (53 percent) is just below the 1998 national baseline (54 percent).

Idaho Diabetes Management Trends – Dilated Eye Exams

Diabetic retinopathy is a disease that is very specific to patients with both type 1 and type 2 diabetes. Diabetic retinopathy is the leading cause of blindness among adults age 20-74. Blindness because of diabetes is a result of distortion of blood vessel growth on the retina, bleeding from newly formed blood vessels resulting from retinopathy, or retinal detachment.¹

Time is the most critical risk factor for the onset of retinopathy. After 20 years of living with diabetes nearly all individuals with type 1 diabetes have some form of retinopathy and more than 60 percent of individuals with type 2 diabetes experience symptoms.¹ As of 2001, 14.6 percent of adults residing in Idaho with diabetes had lived with retinopathy for 20 years or more.⁵

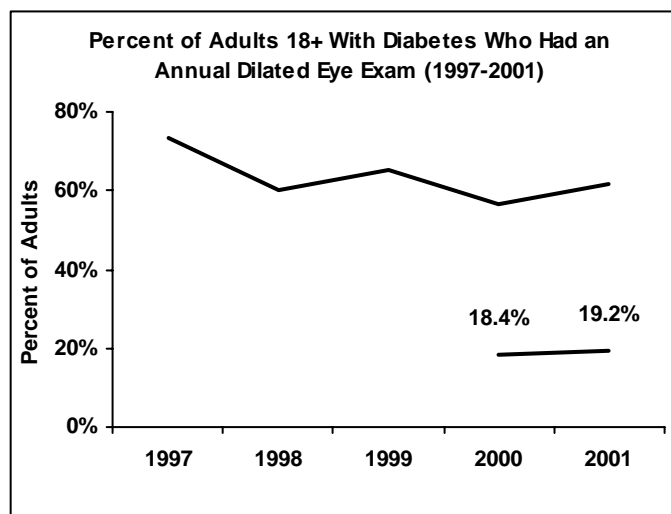
American Diabetes Association Clinical Practice Recommendations

A comprehensive dilated eye exam annually or more frequently is recommended if retinopathy is progressing.¹

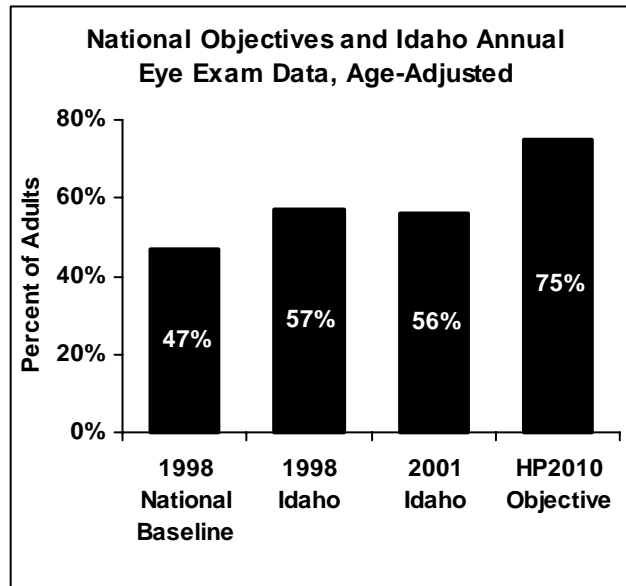
The HP2010 Objective

Increase the proportion of adults with diabetes who have an annual dilated eye examination to 75 percent.³

Year	% Having an Annual Eye Exam	95% Confidence Intervals	
		Lower	Upper
1997	73.5%	67.0%	80.0%
1998	60.4%	52.2%	68.6%
1999	65.3%	58.2%	72.3%
2000	56.4%	49.1%	63.6%
2001	61.8%	55.0%	68.6%



There has been a decrease in the rate at which adults residing in Idaho with diabetes have received at least an annual dilated eye exam since 1997.



In Idaho there is no association between being 65 or older and having a dilated eye exam. In 2001, 58.7 percent of adults aged 18 to 64 had an annual dilated eye exam compared to 66.4 percent of those 65 and older.⁵

Idaho Diabetes Management Trends – Immunizations

Age and the presence of chronic diseases are risk factors for increased hospitalization due to influenza or pneumonia. Flu and pneumococcal vaccinations are a safe way all persons with diabetes, who are 6 years of age or older, can reduce the chances of serious health complications due to flu or pneumonia.¹

American Diabetes Association Clinical Practice Recommendations

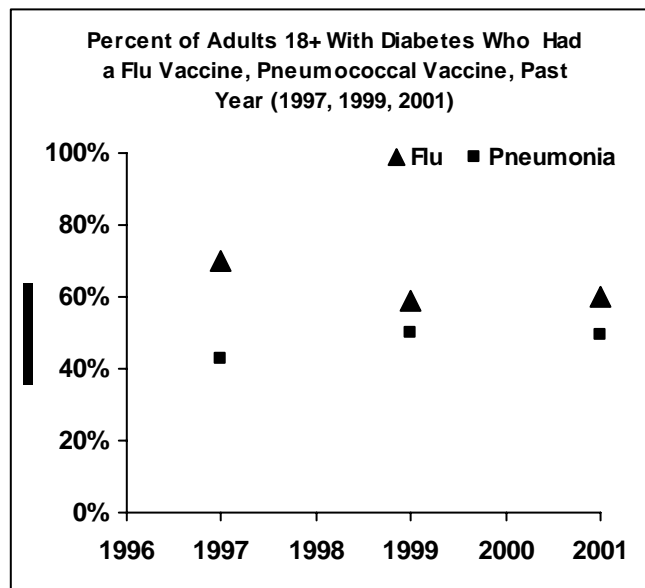
It is recommended that an annual influenza vaccine be given to all patients with diabetes 6 years of age or older. At least one lifetime pneumococcal vaccination for adults with diabetes is recommended. A one-time revaccination is recommended for individuals over 64 years of age previously immunized when they were younger than 65 years of age if the vaccine was administered more than 5 years ago.¹

The HP2010 Objective

Increase the proportion of adults who receive annual influenza and one lifetime pneumococcal vaccination to 60 percent for ages 18-64 and 90 percent for ages 65 and over.³

Year	% Having a Flu Shot, Past Year	95% Confidence Intervals	
		Lower	Upper
1997	70.2%	63.4%	77.0%
1998	NA	NA	NA
1999	59.1%	51.7%	66.5%
2000	NA	NA	NA
2001	60.1%	53.3%	66.8%

There has been a decrease in the rate of flu shots since 1997. In 1997, 70.2 percent of adults with diabetes had received a flu shot in the past year. This has since dropped to 60.1 percent in 2001. It should be noted that influenza vaccine availability was less than ideal in 2000 and 2001. There has been no statistical trend up or down since 1997 in the rate at which adults residing in Idaho with diabetes received pneumonia vaccinations. As of 2001, 49.4 percent of adults with diabetes in Idaho have had a pneumococcal vaccination.



In 1997, 70.2 percent of adults with diabetes had received a flu shot in the past year. This has since dropped to 60.1 percent in 2001. It should be noted that influenza vaccine availability was less than ideal in 2000 and 2001.

Idaho Diabetes Management Trends – Cholesterol Screening

Patients with type 2 diabetes have an increased prevalence of lipid abnormalities that lead to a greater incidence of cardiovascular disease.

American Diabetes Association Clinical Practice Recommendations

Testing for lipid disorders (cholesterol) at least annually and more often if needed is recommended to achieve goals. In adults with low-risk lipid values, it is recommended that a repeat lipid assessment is given every two years.¹

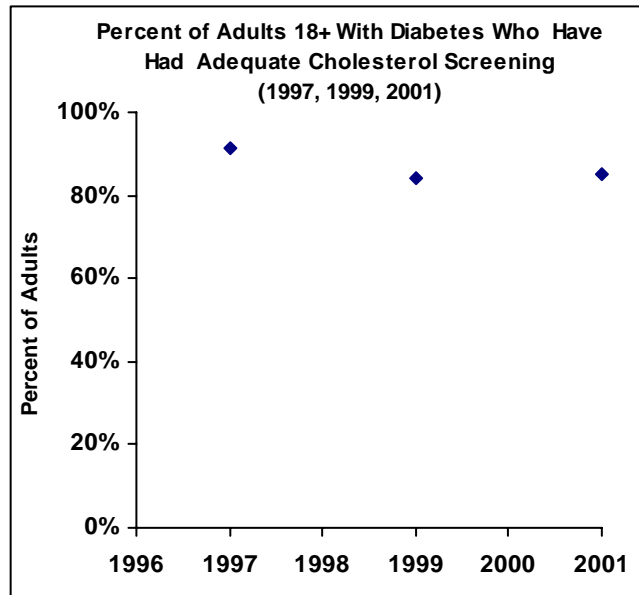
The HP2010 Objective

There are no specific Healthy People 2010 objectives proposed for adults with diabetes and cholesterol screening. However, there is a goal to reduce deaths from cardiovascular disease in persons with diabetes.³ Proper management of blood cholesterol levels is one way to reduce mortality in people with diabetes, especially among those who have already had prior cardiovascular events.¹

Year	% Receiving Cholesterol Screening	95% Confidence Intervals	
		Lower	Upper
1997	91.1%	87.1%	95.1%
1998	NA	NA	NA
1999	84.3%	78.8%	89.8%
2000	NA	NA	NA
2001	85.0%	80.0%	90.0%

In Idaho, cholesterol screening has declined since 1997. In 2001, 85 percent reported adequate cholesterol screening consistent with the American Diabetes Association standards of care. This is down from 91.1 percent in 1997.

Age	% Receiving Adequate Cholesterol Screening, 2001	95% Confidence Intervals	
		Lower	Upper
18-44	62.4%	46.4%	78.4%
45-64	88.8%	82.0%	95.6%
65+	91.7%	86.4%	97.0%



In 2001, people older than 65 were more likely (91.7%) to receive adequate cholesterol screening than those who were younger than 65 years of age.⁵

Idaho Diabetes Management Trends – High Cholesterol

Patients with Type 2 diabetes have an increased prevalence of lipid abnormalities that leads to a greater incidence of cardiovascular disease. Proper management of blood cholesterol levels may reduce mortality in people with diabetes especially among those who have already had prior cardiovascular events.¹ Self reported high cholesterol has remained constant since 1997 with a slight increase from 1997 to 1999.

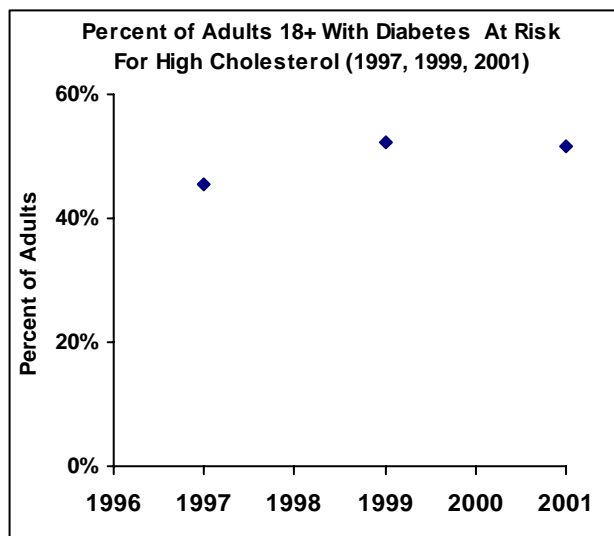
American Diabetes Association Clinical Practice Recommendations

It is recommended that adults with diabetes should lower LDL cholesterol to <100 mg/dl as the primary goal of therapy and lower triglycerides to <150 mg/dl and raise HDL cholesterol to >45 mg/dl in men and >55 mg/dl in women.¹

The HP2010 Objective

There are no specific Healthy People 2010 objectives proposed for adults with diabetes and high cholesterol. However, there is a goal to reduce deaths from cardiovascular disease in persons with diabetes.³ Proper management of blood cholesterol levels is one way to reduce mortality in people with diabetes, especially among those who have already had prior cardiovascular events.¹

Year	% At Risk For High Cholesterol	95% Confidence Intervals	
		Lower	Upper
1997	45.4%	37.1%	53.6%
1998	NA	NA	NA
1999	52.3%	44.5%	60.2%
2000	NA	NA	NA
2001	51.5%	44.0%	58.7%



A person is at risk if they have been screened and have ever been told by a health professional that they have high cholesterol. In 2001, 51.5 percent of adults residing in Idaho with diabetes had been told by a health professional that they had high cholesterol.

Idaho Diabetes Management Trends – Overweight

Being overweight or obese is a major risk factor for the onset of type 2 diabetes. A patient with diabetes can decrease insulin resistance and improve glycemic control by losing a moderate amount of weight.

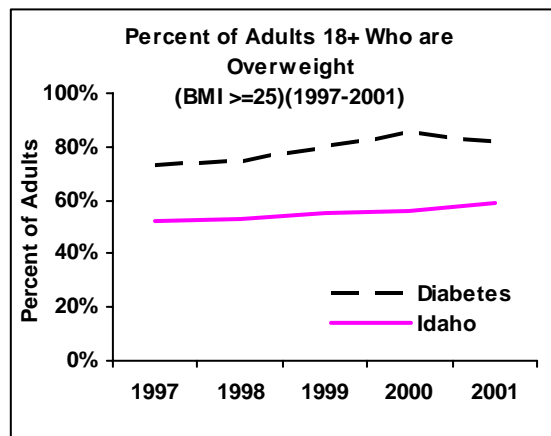
American Diabetes Association Clinical Practice Recommendations

In insulin-resistant individuals, reduced energy intake and moderate weight loss improve insulin resistance and glycemia in the short-term.¹ Therefore, moderate weight loss is recommended.

The HP2010 Objective

There are no specific Healthy People 2010 objectives proposed for adults with diabetes that are overweight. However, it is recognized that personal behaviors that include a diet high in fat and processed foods as well as total calories, have been associated with a greater number of overweight persons in the United States when compared to a decade ago, possibly explaining the increasing diagnosis of type 2 diabetes.³

Year	% Overweight with Diabetes (BMI >=25)	95% Confidence Intervals	
		Lower	Upper
1997	73.5%	66.7%	80.3%
1998	74.5%	67.6%	81.4%
1999	79.9%	73.4%	86.4%
2000	85.0%	79.6%	90.4%
2001	82.0%	76.9%	87.2%



A person is considered overweight if their Body Mass Index (BMI) is greater than or equal to 25, or obese with a BMI greater than 30. BMI is calculated by taking weight in kilograms and dividing by height in meters squared. The percent of adults residing in Idaho with diabetes who were also overweight has increased significantly since 1997. In 2001, 82 percent of adults with diabetes were estimated to be overweight, an increase from 73.5 percent in 1997. Overweight prevalence has increased among all adults in Idaho over the same period of time since 1997. Among all adults in Idaho in 2001, 59.3 percent were overweight.⁵

Idaho Diabetes Management Trends – Hypertension

Hypertension among persons with diabetes increases the risk for numerous complications including stroke, coronary artery disease, and peripheral disease, retinopathy, and nephropathy.¹

American Diabetes Association Clinical Practice Recommendations

Blood pressure should be measured at every routine diabetes visit. Patients should have a general goal of maintaining a systolic pressure in mm/Hg of < 130 and a diastolic pressure of < 80 mm/Hg.¹

The HP2010 Objective

There are no specific Healthy People 2010 objectives proposed for adults with diabetes and hypertension.

Year	% At Risk For High Blood Pressure	95% Confidence Intervals	
		Lower	Upper
1997	62.2%	54.3%	68.6%
1998	NA	NA	NA
1999	61.5%	54.4%	68.6%
2000	NA	NA	NA
2001	64.3%	57.5%	71.1%

A person is at risk for hypertension if they have ever been told by a doctor, nurse, or other health professional that they have high blood pressure. Prevalence of self-reported hypertension in the form of high blood pressure has remained constant since 1997 with 64.3 percent of adults with diabetes in 2001 reporting that they had been told by a health professional that they have high blood pressure. Among the general population in Idaho, high blood pressure risk increases dramatically with age. However, risk for hypertension among persons with diabetes does not significantly increase with age. In 2001, 67.2 percent of those with diabetes aged 65 and older were at risk compared to 62.7 percent of those with diabetes between 18 and 64 years of age.⁵

Idaho Diabetes Management Trends – Cigarette Smoking

Smoking is the leading avoidable cause of mortality in the U.S., accounting for approximately 434,000 deaths each year. Cigarette smoking contributes to one in five deaths in the U.S., and is a modifiable cause of premature death. Smoking compounds the macrovascular and cardiovascular complications that are already highly prevalent among persons with diabetes. The American Diabetes Association asserts that smoking cessation is a vital part of diabetes care.¹

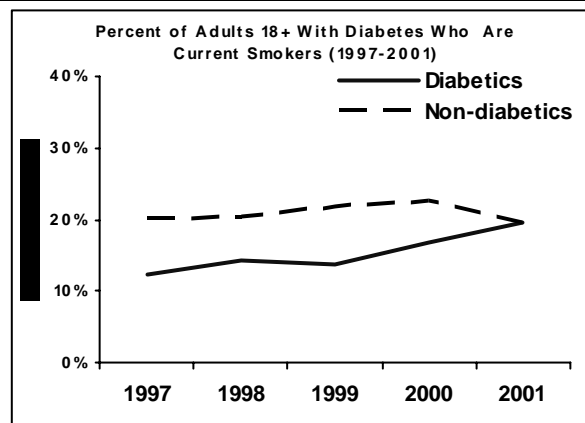
American Diabetes Association Clinical Practice Recommendations

Every smoker should be urged to quit in a clear, strong, and personalized manner that describes the added risks of smoking and diabetes.¹

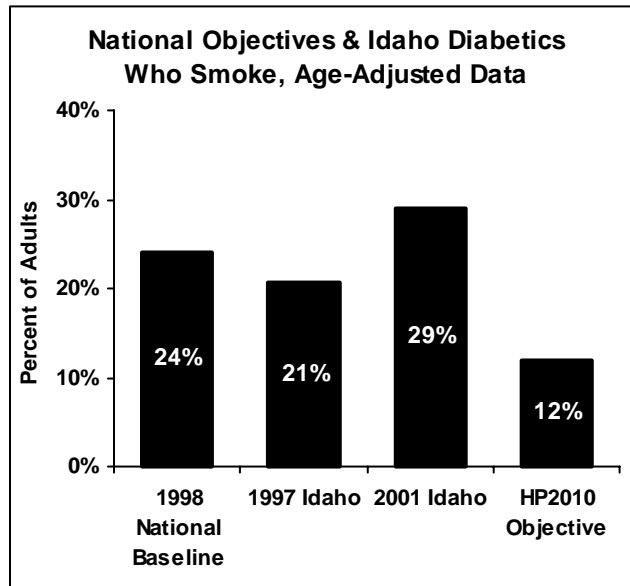
The HP2010 Objective

There are no specific Healthy People 2010 objectives proposed for adults with diabetes and cigarette smoking. However, when adjusting for age difference the relative severity of smoking prevalence among adults with diabetes becomes more apparent.

Year	% People with Diabetes who are Current Smokers	95% Confidence Intervals	
		Lower	Upper
1997	12.2%	7.4%	17.0%
1998	14.3%	8.6%	20.0%
1999	14.3%	8.2%	19.2%
2000	16.7%	11.5%	22.0%
2001	19.7%	14.1%	25.2%



A current smoker is someone who has smoked at least 100 cigarettes in their lifetime and now smokes some days or everyday. Smoking among adults residing in Idaho with diabetes has increased significantly since 1997. Prevalence has increased from 12.2 percent in 1997 to 19.7 percent in 2001. During this same period, smoking prevalence among non-diabetics showed little change, decreasing slightly from 20.3 percent in 1997 to 19.6 percent in 2001.⁵ Like other populations, smoking prevalence among persons with diabetes is associated with being less than 65 years of age. In 2001, 26.4 percent of persons with diabetes age 18-64 were current smokers compared to 10.1 percent of people age 65 or older. When adjusting for age, adults with diabetes smoke at a rate of 29 percent compared to the 20 percent statewide smoking prevalence.⁵



In Idaho, the 2001 age-adjusted estimate of people with diabetes that smoke was 29 percent. Diverging sharply away from the national goals of 12 percent.⁵

Idaho Diabetes Management Trends – Physical Activity

A person is at risk for being sedentary if they have not participated in any physical activities apart from work in the past month.

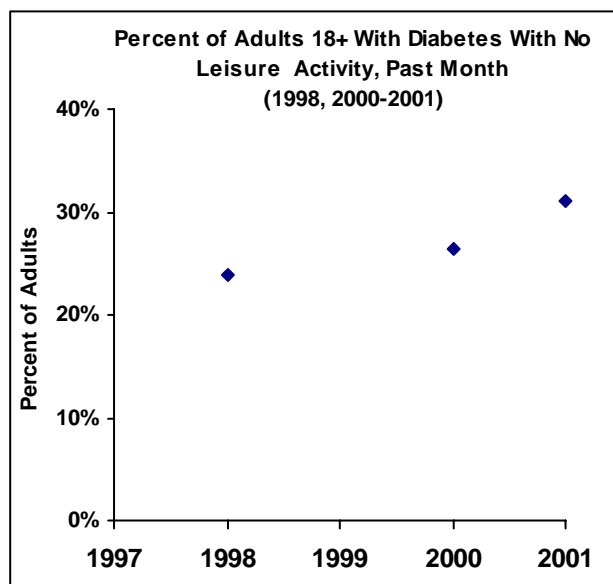
American Diabetes Association Clinical Practice Recommendations

Regular exercise can positively affect glycemic control, risk for cardiovascular disease including both hypertension and cholesterol levels. Regular exercise along with proper diet will result in weight loss which contributes to improved diabetes management.¹

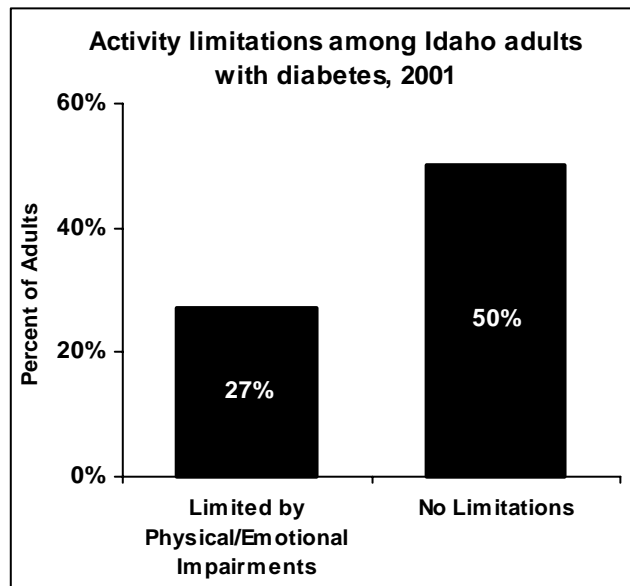
The HP2010 Objective

There are no specific Healthy People 2010 objectives proposed for adults with diabetes and physical activity.

Year	% Of People With Diabetes With No Leisure Time Physical Activity	95% Confidence Intervals	
		Lower	Upper
1997	NA	NA	NA
1998	23.9%	16.7%	31.0%
1999	NA	NA	NA
2000	26.5%	20.5%	32.4%
2001	31.0%	24.7%	37.3%



In 2001, 31.0 percent of adults residing in Idaho with diabetes did not engage in any leisure time physical activity in the past month.⁵ The prevalence of sedentary lifestyles has increased in magnitude since 1998, but the change over time is not considered statistically significant. Among adults residing in Idaho with diabetes, 41.4 percent exercise moderately or vigorously 30 minutes or more a day at least 5 times a week.⁵



Exercise among people with diabetes often leads to a discussion on the feasibility of people with diabetes and exercise safety. Points for consideration are various physical limitations such as sensory loss in feet, glycemic control and proper nutrition. Thirty-seven percent of adults with diabetes responded in the BRFSS survey that they were limited in their activities because of physical, mental, or emotional problems. Among those who are disabled, 27.0 percent exercised moderately or vigorously 30 or more minutes a day for at least 5 days a week compared to 50.2 percent of adults with diabetes not reporting a disability that limits their activity.⁵

Idaho Diabetes Management Trends – Quality of Life

Diabetes is a complicated disease that plays a major part in the every day lives of patients. When a person with diabetes reports only a fair or poor rating on their own general health, it becomes difficult to expect that individual to follow through with proper self-management of their disease and its numerous complications.

American Diabetes Association Clinical Practice Recommendations

It is recommended that persons with diabetes should focus on having a positive influence over blood glucose and overall health by choosing foods wisely, exercising regularly, reducing stress level, and making modest lifestyle changes.¹

The HP2010 Objective

There are no specific Healthy People 2010 objectives proposed for adults with diabetes and quality of life.

Year	% Reporting Fair or Poor General Health	95% Confidence Intervals	
		Lower	Upper
1997	40.7%	32.9%	48.4%
1998	47.5%	39.3%	55.6%
1999	40.0%	32.8%	47.2%
2000	48.1%	40.9%	55.4%
2001	46.9%	40.0%	53.8%

There are several categories where a person's quality of life can be assessed. Physical health (illness and injury) and mental health (stress levels, depression and problems with emotions) are areas that adults with diabetes can self-assess in determining their own quality of life.

	Self Reported Health Status		P value
	Fair/Poor	Good +	
Percent having a household income < \$25,000	57.6%	34.7%	.0006
Percent at risk for high blood pressure	74.7%	54.9%	.0156
Percent at risk for high cholesterol	59.8%	44.2%	.2540
Percent current smokers	22.0%	17.7%	.0118
Percent overweight	86.0%	78.5%	.1503

Adults with diabetes who reported only fair or poor general health were more likely to have an annual household income of less than \$25,000, be at risk for high blood pressure, be at risk for high cholesterol and currently smoke.

Idaho Diabetes Management Trends – Diabetes Education

Formal education related to self-management of diabetes may help all people with diabetes. Education may help overcome the mechanical, physical, and psychological barriers that may complicate proper daily self care.

American Diabetes Association Clinical Practice Recommendations

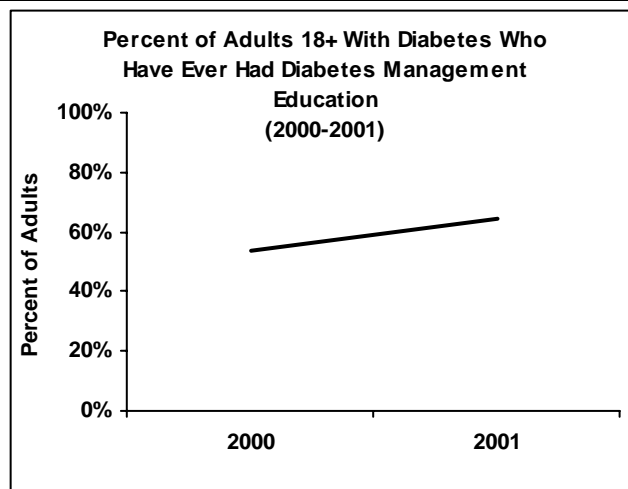
Each individual with diabetes should be involved in a diabetes self-management education program that is an interactive, ongoing process with the educator(s). The education process should include:

- Assessment of the individual's specific education needs.
- Identification of the individual's diabetic self-management goals.
- Education and behavioral intervention directed toward helping the individual achieve identified self-management goals.
- Evaluation of the individual's attainment of the identified self-management goals.¹

The HP2010 Objective

There are no specific Healthy People 2010 objectives proposed for adults with diabetes and diabetes education.

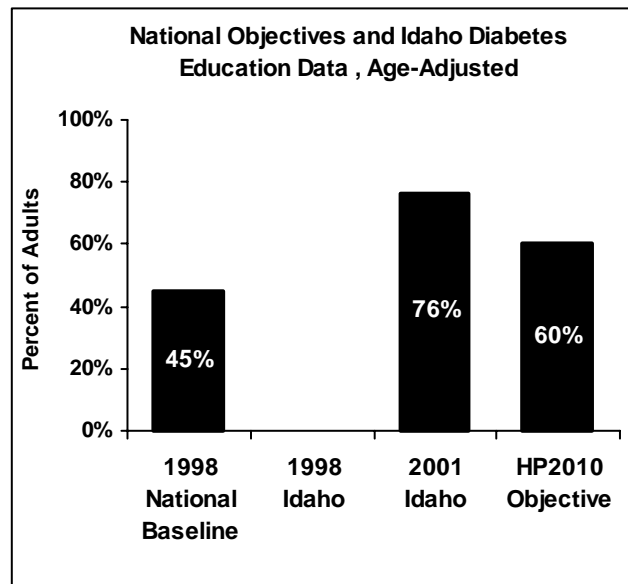
Year	% Having Diabetes Education	95% Confidence Intervals	
		Lower	Upper
1997	NA	NA	NA
1998	NA	NA	NA
1999	NA	NA	NA
2000	54.0%	46.7%	61.3%
2001	64.3%	57.8%	71.1%



There was a statistically significant increase between 2000 and 2001 in the percent of adults residing in Idaho with diabetes reporting having had a class to manage their diabetes.

	Ever taken a class on self-managing diabetes		P-value
	Yes	No	
Percent having an annual foot exam	68.4%	51.0%	.0006
Percent checking blood sugar at least once daily	58.9%	46.4%	.0156
Percent having an annual dilated eye exam	61.6%	55.7%	.2540
Percent taking insulin	32.9%	21.5%	.0118

Using 2000 and 2001 data, adults with diabetes who have had a self-management class, were more likely to have had an annual foot exam, self-monitor blood glucose levels at least daily and to be a current insulin user.



Using 2001 age adjusted estimates, Idaho has already exceeded the 60 percent national goal for diabetes management courses. Data not available in Idaho for 1998.

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⁵Idaho Department of Health and Welfare, Bureau of Health Policy and Vital Statistics. Unpublished 2001 Behavioral Risk Factor Surveillance System data. Idaho Department of Health and Welfare. Boise, ID.

⁶Idaho Department of Health and Welfare, Bureau of Health Policy and Vital Statistics. Unpublished 2000 Behavioral Risk Factor Surveillance System data. Idaho Department of Health and Welfare. Boise, ID.

⁷Idaho Department of Health and Welfare, Bureau of Health Policy and Vital Statistics. Unpublished 1999 Behavioral Risk Factor Surveillance System data. Idaho Department of Health and Welfare. Boise, ID.

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¹⁰Campaigne, Barbara N. and Kathleen L. Wishner. (2000) "Gender-Specific Health Care in Diabetes Mellitus" *The Journal of Gender-Specific Medicine*," *The Journal of Gender-Specific Medicine*;3[1]:51-58.

